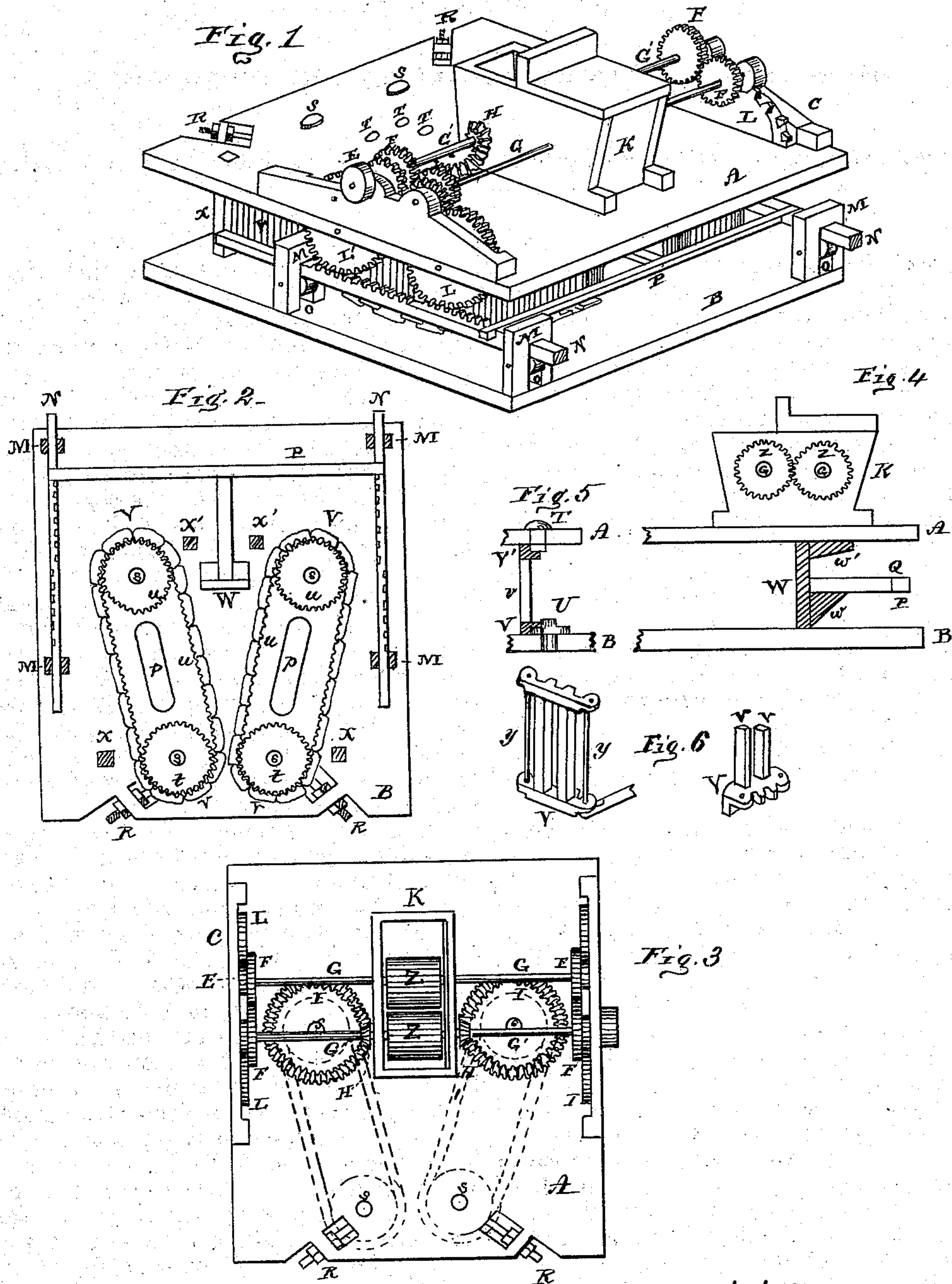


P. EBY.

Combined Apple and Cider Mills.

No. 154,591.

Patented Sept. 1, 1874.



WITNESSES:

W. B. Kemminger
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INVENTOR-

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UNITED STATES PATENT OFFICE

PETER EBY, OF SALISBURY TOWNSHIP, (NEAR KINZER'S P. O.,) LANCASTER COUNTY, PENNSYLVANIA.

IMPROVEMENT IN COMBINED APPLE AND CIDER MILLS.

Specification forming part of Letters Patent No. **154,591**, dated September 1, 1874; application filed July 9, 1874.

To all whom it may concern:

Be it known that I, PETER EBY, of Salisbury township, (near Kinzer's post-office,) in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in a Combined Apple and Cider-Mill, of which the following is a specification:

The accompanying drawings illustrate the construction, and letters of reference marked thereon indicate the several parts, in which—

Figure 1 is a perspective view of the machine; Fig. 2, a plan or bottom view of the same; Fig. 3, top plan. Fig. 4 shows the hopper, apple-mill, and pressing or feed device. Fig. 5 shows the guides, above and below, for the endless combination of slats, for straining and also pressing the pulp. Fig. 6 illustrates the cogged links, with the slats and connecting pivot-rods.

A brief explanation will enable any one skilled in the art to make and use this machine.

The top A and bottom B are of equal size, and nearly square in form. The hopper K is partially closed on top, and contains a pair of crushing-rollers, Z, of any desired construction. Their shafts G' G extend through the sides of the hopper, which is placed equidistant between the raised bearings C. These support the boxes of said shafts on each side, said shafts extending across the top from one side to the other. The shaft G' has a belt-pulley, D, on its outer end, on one side, by which motion is given to the machinery by means of horse or other power. This shaft also bears a bevel-pinion, H, on each side of the hopper, and gives motion to the horizontal beveled wheels I, (on the one pair of vertical shafts s s,) seen on the top, A, under which said shafts s s are provided with drums or cogged wheels u u, and also impart motion to similar drums or cogged wheels t t on shafts s s, set closer together and surrounded by an endless series of slats, v, in pairs on head and bottom plates V having a flange on one end or edge, with the inner edge somewhat curved and provided with cogs, which engage with the cogs on the drums or wheels u t. (Shown by Fig. 5.) The sections of slats (two in number on each) have

rounded ends boxed out, so that one pair overlaps the adjoining pairs above and below the slats, and combined by pivot-rods y. Thus two endless cages or pressing strainers are formed, separated at one end, and made to approximate or come in close contact at the other end, and thus made to revolve in unison in one direction by the hinged plates V, cogged drums, and gearing aforesaid, shown by Fig. 2. In order to keep the cages in line a series of short guide-pins, T, Fig. 4, are inserted through the top A, against which the flanges on the cogged chain-plates V are brought to bear. Pins U, with a flange or collar, are set in like manner and for like purpose into the bottom, acting also as anti-friction rollers against said flanges. There is also a plunger, W, having a table, w', above, (Fig. 3,) and a wedge-shaped base, w. This is pushed back and forth under the hopper-opening to push the pulp forward between the converging cages as it drops ground from the mill in the hopper. What is lodged on the table w' in its forward motion is scraped off as the plunger recedes, to be pushed forward on its return, thus crowding the pulp against the slats, which in their motion carry it forward where the final pressure is given as it is forced out between the meeting slats, and, as dry pomace, discharged, the juices, in the meantime, having drained through the slats into the interior of the cages and discharged through oblong openings p, centrally in each cage, and collected in vessels or troughs provided for its reception. In order to operate the action of the plunger W special gearing is connected with the shafts G' G, to communicate motion to the same. This consists (in addition to the cogged wheels F, for giving motion to both shafts) of small pinions E, inserted on each end outside the cogged wheels F. These pinions, respectively, give motion to the rack-wheels L L on each side. The rack-wheels have an outer edge of their periphery made blank, with half-cogs only for a certain section, so arranged as to bring said wheels alternately in contact with cogs on the upper face of a horizontal rack-bar, N, provided with a series of cogs half-way on the

bar on opposite sides of the same, the alternate sides being blank, by which arrangement one pair of wheels L, on opposite sides, move the rack forward, and the other pair now engages and moves the rack back. These racks N pass between slotted posts M, which act as guides and are supported by passing over pulleys o, secured in the slots, as also to reduce the friction. These racks are united by a cross-piece, P, to the center of which the shaft Q of the plunger W is attached, and receives its motion as the racks are alternately propelled back and forth by means of the gearing mentioned.

I may mention, that in order to adjust the pressing end of the endless revolving cages, I show set-screws R in the top and bottom, having jam-nuts. The proper feed of the mill, so as not to crowd the pulp too much, will answer, once the proper adjustment is made.

This arrangement in a cider-mill and press is deemed novel and useful, and I am not aware of any thing of the kind substantially like it. Therefore,

I claim—

1. In combination with the central hopper

K and crushing-cylinders Z, the long shafts G' G, the bevel-pinion H, on each side of the hopper, to operate respectively a horizontal bevel-wheel, I, substantially constructed to operate in the manner and for the purpose specified.

2. In combination with the horizontal bevel-wheels I, the vertical shafts s s with their cogged drums or wheels u u t t, the combined endless cages composed of slatted sections v, on flanged and cogged links V, pivot-rods y, and guide-pins T U, all combined to operate substantially in the manner and for the purpose set forth.

3. In combination with the extra pinions E the semi-cogged rack-wheels L L, racks N, slotted guide-posts M, supporting-rollers O, cross-piece P, which unites the racks and centrally supports the plunger-shaft Q, plunger W w' w, all combined to operate substantially in the manner and for the purpose described.

PETER EBY.

Witnesses:

M. B. FENNINGER,

A. FLEMING SLAYMAKER.